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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,620	11/20/2001	Matthew N. Dailey	59554-034	8795

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McDERMOTT, WILL & EMERY
600 13th Street, N.W.
Washington, DC 20005-3096

EXAMINER

ALI, MOHAMMAD

ART UNIT	PAPER NUMBER
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2177

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,620

Applicant(s)

DAILEY ET AL.

Examiner

Mohammad Ali

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) 12-22 is/are allowed.
6) ☒ Claim(s) 1-11 and 23-36 is/are rejected.
7) ☐ Claim(s) 23 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to the application filed on November 20, 2001.

The application has been examined. Claims 1-16 are pending in this Office Action.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

In the specification page 2 and other subsequent pages there are some prior art of discussions. It should be listed in PTO-1449.

Appropriate correction is required.

Claim Objections

3. Claim 23 is objected to because of the following informalities: in page 25, claim 24, line 3, after the word attributes ";," should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-11 and 23-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hellerstein et al. ('Hellerstein' hereinafter), USP 6,430,615 in view Vanderveldt et al. ('Vanderveldt' hereinafter), USP 6,266,668.

With respect to claim 1,

Hellerstein discloses a method for assessing similarity between two data objects (see col. 4, lines 5-9, Fig. 2A), comprising the steps of:

a. receiving two data objects of type X (the manager receives the values of measurements obtained from the managed system, places them in them

ManagerMeasurementRepository with a StatusCode of "actual", and notifies the Application that the data are present, see col. 15, lines 18-20, Fig. 13);

b. deriving respective variables for each of said two data objects (agent model handler that defines, updates, deletes, and uses predictive models on the managed system; A plurality of agent data access facilities that provide actual values "objects" of measurement variables, see col. 5, lines 1-4);

c. comparing the respective variables of said two data objects to derive an X,X comparison (the actual value is obtained from the Agent Data Access Facility and the two values are compared and found to be sufficiently close, see col. 16, lines 2-4, Fig. 1A); and

d. running said X,X comparison through a predictive model to calculate a similarity score for said two data objects (the root specifies that the result produced by the subtree, rooted at node, should be added to the result produced by the subtree rooted at node, see col. 13, lines 25-27, Fig. 6B).

Hellerstein does not explicitly indicate the claimed similarity score.

Vanderveldt discloses claimed similarity score (assigned a relevance score for the user requested query, see col. 3, lines 4-5, Vanderveldt).

It would have been obvious to one ordinary skill in the data processing art at the time of the present invention to combine teachings of the cited references because similarity score of Vanderveldt's teachings would have allowed Hellerstein's system in dynamic search engine applied to the Internet that allows for customized queries and relevant responses as taught by Vanderveldt at col. 1, lines 20-21.

As to claim 2,

Hellerstein teaches wherein said predictive model comprises a neural network (see col. 10, lines 1-3, Fig. 1B).

As to claim 3,

Hellerstein teaches wherein said predictive model comprises a regression model (see col. 4, lines 8-9).

As to claim 4,

Hellerstein teaches wherein the two data objects include documents (see col. 4, lines 19-25).

As to claim 5,

Hellerstein teaches wherein the two data objects include one of resumes and job descriptions (see col. 18, lines 30-31 et seq).

As to claim 6,

Hellerstein teaches wherein the respective derived variables (see col. 11, lines 22-25 et seq) include one or more of following:

- i. reduced representation of the words in a resume (see col. 18, lines 30-31 et seq);
- ii. reduced representation of the words in the education section of a resume (see col. 18, lines 30-31 et seq);
- iii. reduced representation of each job description in a resume (see col. 18, lines 30-31 et seq);
- iv. years of experience (see col. 18, lines 30-31 et seq);

- v. standardized variables (see col. 18, lines 30-31 et seq);
- vi. such as job titles (see col. 18, lines 30-31 et seq);
- vii. industry SIC codes (see col. 18, lines 30-31 et seq); and
- viii. degree names (see col. 18, lines 30-31 et seq).

As to claim 7,

Hellerstein teaches

- e. repeating steps a) through d) for a plurality of data objects of type X (see col. 15, lines 18-20, Fig. 13); and
- f. clustering the plurality of data objects according to the calculated similarity scores (see col. 13, lines 25-27, Fig. 6B).

As to claim 8,

Hellerstein teaches

- e. repeating steps a) through d) for a plurality of data objects of type X in a database (see col. 15, lines 18-20, Fig. 13); and
- f. organizing the database of objects of type X based on the calculated similarity scores (see col. 13, lines 25-27, Fig. 6B).

As to claim 9,

Hellerstein teaches

- e. repeating steps a) through d) for a plurality of data objects of type X ((see col. 15, lines 18-20, Fig. 13); and
- f. deriving from the calculated similarity scores one of a measure of supply of data objects of type X and a measure of demand for a particular one of the plurality of

data objects of type X (see col. 13, lines 25-27, Fig. 6B).

As to claim 10,

Hellerstein teaches wherein the step of comparing the respective variables further includes the steps of:

- i) constructing a vector for each of the two data objects from the derived respective variables (Abstract, Fig. 13B); and
- ii) calculating the cosine of the angle between the vectors (Abstract, Fig. 13B et seq).

As to claim 11,

Hellerstein teaches wherein the step of comparing the respective variables (Abstract) further includes the steps of:

- i) constructing a vector for each of the two data objects from the derived respective variables (Abstract, Fig. 13); and
- ii) calculating the dot product of the vectors (Abstract, Fig. 13).

With respect to claim 23,

Hellerstein discloses a method for assessing similarity between two data objects (see col. 4, lines 5-9, Fig. 2A), comprising the steps of:

- a. training a predictive model with a first set of data objects of type X and matched data objects of type Y, such that data objects of type X are treated the same as data objects of type Y with respect one or more common attributes (see col. 11, lines 5-20);

b. receiving two data objects of type X that are not in the first set of data objects (the manager receives the values of measurements obtained from the managed system, places them in them ManagerMeasurementRepository with a StatusCode of "actual", and notifies the Application that the data are present, see col. 15, lines 18-20, Fig. 13); and

c. running said received two data objects of type X through said predictive model as though one were a data object of type X and the other were a data object of type Y to calculate a similarity score for said received two data objects of type X (the root specifies that the result "score" produced by the subtree, rooted at node, should be added to the result produced by the subtree rooted at node, see col. 13, lines 25-27, Fig. 6B).

Hellerstein does not explicitly indicate the claimed similarity score.

Vanderveldt discloses claimed similarity score (assigned a relevance score for the user requested query, see col. 3, lines 4-5, Vanderveldt).

It would have been obvious to one ordinary skill in the data processing art at the time of the present invention to combine teachings of the cited references because similarity score of Vanderveldt's teachings would have allowed Hellerstein's system in dynamic search engine applied to the Internet that allows for customized queries and relevant responses as taught by Vanderveldt at col. 1, lines 20-21.

As to claim 24,

Hellerstein teaches wherein the one or more common attributes includes considering one of the data objects as a bag of words (see col. 11, lines 5-20).

As to claim 25,

Hellerstein teaches wherein said predictive model comprises a neural network (see col. 10, lines 1-3, Fig. 1B).

As to claim 26,

Hellerstein teaches wherein said predictive model comprises a regression model (see col. 11, lines 5-20).

As to claim 27,

Hellerstein teaches wherein the received two data objects include documents (see col. 11, lines 5-20).

As to claim 28,

Hellerstein teaches wherein the received two data objects include one of resumes and job descriptions (see col. 11, lines 5-20 and col. 13, lines 25-26).

As to claim 29,

Hellerstein teaches

d. repeating steps b) and c) for a plurality of data objects of type X (see col. 15, lines 18-20, Fig. 13); and

e. clustering the plurality of data objects according to the calculated similarity scores (see col. 15, lines 18-20, Fig. 13).

As to claim 30,

Hellerstein teaches d. repeating steps b) and c) for a plurality of data objects of type X in a database (see col. 15, lines 18-20, Fig. 13); and

e. organizing the database of objects of type X based on the calculated similarity scores (see col. 15, lines 18-20, Fig. 13).

As to claim 31,

Hellerstein teaches

d. repeating steps b) through c) for a plurality of data objects of type X; and

e. deriving from the calculated similarity scores one of a measure of supply of data objects of type X and a measure of demand for a particular one of the plurality of data objects of type X ((see col. 15, lines 18-20, Fig. 13).

With respect to claim 32,

Hellerstein discloses system for assessing similarity between two data objects (see col. 4, lines 5-9, Fig. 2A), comprising:

a. means for assessing compatibility between data objects of type X and data objects of type Y (see col. 11, lines 5-20);

b. means for assessing similarity of a pair of data objects of type X, wherein the pair includes a first data object of type X and a second data object of type X and the assessed similarity of the pair is based on the compatibility of each of the first and second data objects with objects of type Y (see col. 11, lines 5-20 and col. 13, lines 19-21 et seq);

c. means for deriving respective variables from each of the first and second data objects of type X (agent model handler that defines, updates, deletes, and uses predictive models on the managed system; A plurality of agent data access facilities that provide actual values "objects" of measurement variables, see col. 5, lines 1-4);

d. means for comparing the respective variables to calculate a comparison of the first and second data objects (the actual value is obtained from the Agent Data Access Facility and the two values are compared and found to be sufficiently close, see col. 16, lines 2-4, Fig. 1A); and

e. a predictive model trained with the comparison of the respective variables derived from the first and second data objects of type X (see col. 5, lines 1-4 et seq).

Hellerstein does not explicitly indicate the claimed assessing similarity data.

Vanderveldt discloses claimed similarity score (assigned a relevance score for the user-requested query, see col. 3, lines 4-5 et seq, Vanderveldt).

It would have been obvious to one ordinary skill in the data processing art at the time of the present invention to combine teachings of the cited references because assessing similarity data of Vanderveldt's teachings would have allowed Hellerstein's system in dynamic search engine applied to the Internet that allows for customized queries and relevant responses as taught by Vanderveldt at col. 1, lines 20-21.

As to claim 33,

Hellerstein teaches wherein said predictive model comprises a neural network (see col. 10, lines 1-3).

As to claim 34,

Hellerstein teaches wherein said predictive model comprises a regression model (see col. 11, lines 5-20).

As to claim 35,

Hellerstein teaches wherein the first and second data objects include documents (see col. 11, lines 5-20 et seq).

As to claim 35,

Hellerstein teaches wherein the first and second data objects include one of resumes and job descriptions (see col. 11, lines 5-20 et seq).

Allowable Subject Matter

6. Claims 12-22 are allowed.

The prior art made of record does teach or fairly suggest combination elements as recited in claim 12. Specifically the prior art of record does teach or suggest wherein the steps (d)-(l) as recited in the independent claim 12.

Claims 13-22 are further limits of claim 12 and essentially allowed for the same reasons.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is (703) 605-4356. The examiner can normally be reached on Monday to Thursday from 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (703) 305-9790 or Customer Service (703) 306-5631. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for any communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.



Mohammad Ali

Patent Examiner

AU 2177

MA

July 19, 2004